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SATURDAY, DECEMBER 9, 1893.

PRICE 11d.

# APPEAL CASES IN THE HOUSE OF LORDS.

An appeal to the House of Lords is essentially and emphatically a last resort on the part of any litigant, and is also highly expensive. Moreover, it must be preceded by a long course of costly litigation in inferior courts, and an absolutely unassessable amount of mental wear-and-tear and of waste of moral tissue. But an explanation of the course of procedure may not come amiss, even to those who have no prospect of being concerned in a case appealed to the Highest Court of Appeal in the United Kingdom.

The first thing which strikes both the Appellant and the curious stranger about the House of Lords is, its utter unlikeness to any court of justice with which he has been familiar. The atmosphere is distinct and peculiar, and as different from a Sheriff Court, or Assize Court, or even the Inner House of the Court of Session, as can well be imagined. The whole area seems bathed in an air of calm repose and cool deliberation. There is no hurry and no excitement—no crowd of anxious witnesses, and no gallery of interested spectators.

If you have lost your case in all the lower courts, and are still convinced, or persuaded, that the law is really on your side—and strict law is the nearest approach to absolute justice we can look for in human society—and decide to appeal to the House of Lords, you find from the very outset that you are to have a wholly new experience. The familiar, if somewhat exasperating, 'Take Notice' of your former proceedings disappears, and you make acquaintance with a document addressed 'To the Right Honourable the House of Lords, the humble petition and appeal' of yourself, praying that the judgment in such-and-such a case be reviewed before Her Majesty the Queen in her High Court of Parliament.

But before even this petition can be lodged, you must obtain two Counsel of standing and repute to certify in formal terms to the Lords that they 'humbly conceive this to be a proper

case to be heard before your Lordships.' This petition must be printed on parchment—a costly item in the luxury of Appeal. With this petition, security has to be lodged for due payment of the costs to be incurred—namely, a 'recognisance' to the amount of five hundred pounds and a bond for two hundred pounds.

Supposing all these preliminaries to be completed, then the case for each side forming the subject-matter of Appeal has to be set forth for My Lords. It must be clearly printed in large type on quarto-sized sheets, and bound in bookform. Forty copies must be lodged, and of these, ten must be bound in purple cloth, with parchment slips inserted at each part of the case, thus dividing the book into sections—namely, 'Petition and Appeal,' 'Appellant's Case,' 'Appellant's Index,' 'Respondent's Case,' and 'Respondent's Index.'

No witnesses are called, of course, in an Appeal to the Lords, and therefore there is no cross-examination, no browbeating, and no sparring between Counsel. The facts are supposed to have been already thoroughly thrashed out, and it remains but to deliver the final and irrevocable fiat of the law upon the law of the case.

The ultimate arbiters who constitute this Supreme Court of Appeal are, nominally, all the Peers of the realm. Every Peer, of whatever rank, is entitled to sit and hear arguments in any case. But in practice the lay Peers, as distinguished from the legal Peers, do not attend, and they never attempt to exercise their constitutional right. The judges who actually constitute the House of Lords as a legal tribunal are—the Lord Chancellor, the Lords of Appeal-in-Ordinarywho are life Peers created for this special purpose -and such other members of the House of Lords as have held high judicial posts in the past-ex-Lord Chancellors and the like. Three such Peers are required to form a quorum, no matter how many lay Peers may choose to attend at the hearing or voting. In practice, though not by statute, both the hearing and the verdict are left entirely to the Law Lords.

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During the hearing, the Lord Chancellor in his robes comes down from the woolsack and takes a seat along with his legal colleagues on the benches nearest to the bar, on the other side of which is accommodation for ten or a dozen Counsel and legal agents. Before each of the Lords is placed a small movable table to hold his papers and books of reference, &c. And then the business begins. But it is conducted in a very different manner from the proceedings of which you have had unhappy experience in the courts below. Here are no flurried witnesses, excited agents, anxious 'parties,' and dictatorial barristers.

The facts are before the House, in clear print and compact and condensed form. The Counsel for the Appellant proceeds to argue against the judgment of the lower court in the light of the facts and on points of law. But he does not orate, and argument takes rather the form of friendly debate in ordinary conversational tones. There is no hurry; and as points are raised and cases are cited, the attendants are engaged in bringing books of reference, &c., so that the Lords may verify quotations or refresh their memories. Now and again a Peer puts a quiet question, which either throws a new light or leads to fresh inquiry. Everything proceeds with calm and dignified pace, and for an example of patient, dispassionate perseverance there is nothing to excel the House of Lords sitting as a Court of Appeal.

When the Counsel for the Appellant has stated his case, and the Counsel for the Respondent has, in the same conversational manner, replied; when the Lords have heard both sides with equal patience, and have elicited all the information they require to form a judgment on the various points presented, then the House adjourns, and the time comes for you to exercise patience. For when judgment will be delivered no man can say. The Peers require time for consideration, and the law must not be jostled.

At last, however, you hear from your agent that your case is on the paper for to-morrow's business, the House sitting at 10.30 a.m. Down you go to Westminster, and find yourself in the lobby, perhaps, with a small crowd of other anxious and excited Appellants and Respondents, whose cases are also down on the paper for judgment. Here also come the gentlemen in wigs and robes, who, being professionally engaged, may enter the sacred precincts by the big doors; while their brethren, equally learned in the law, but not at the moment professionally engaged, must wait their opportunity like ordinary civilians.

We will assume that you have obtained entry to hear what is officially called the 'Consideration' of your case. You find the appearance of the House somewhat different from what it was during debate. The Lord Chancellor is on the woolsack; and other four Peers, say, are on the benches near the bar, two on each side, and each with the little table again before him. Perfect silence reigns, and calm and deep peace pervade the atmosphere—whatever may be the turmoil in your own bosom.

By-and-by the Lord Chancellor rises from the woolsack, and, with slow and deliberate pace, descends to the clerk's table. Standing at the table, he begins to read from his manuscript:

'My Lords—in this case of A. versus B.'—and so on to the deliverance of his own opinion on the points. Then he returns to the woolsack, and a Law Lord rises and reads his opinion, perhaps at some length, but with clearness and argumentative force. Then rise in succession the other Law Lords, each not delivering but reading his opinion, some giving reasons at length, and some, perhaps, merely concurring in a few words with opinions already read.

Some Law Lords are habitually minute and painstaking in setting forth their reasons for arriving at conclusions, and in marshalling the arguments by which they fortify their reasons; but other Law Lords are as habitually terse and reticent, frequently concurring without stating either reasons or argument.

This, however, is the rule of the House, as fixed and immutable as the laws of the Medes and Persians: that each Peer must read, not recite, his judgment from his own written or printed text, and he must read it standing, as if he were addressing the whole House, and not a long array of empty benches.

When all the Law Lords have finished reading their opinions, you realise, let us say, that they are unanimously in favour of the decision of the court below—which means the dismissal of your Appeal. This being so, the Lord Chancellor rises, but remaining by the woolsack, and turning towards right and left, as if the silent benches were peopled with listening Peers, thus pronounces, without pause or punctuation: 'My Lords, the motion before your Lordships' House is, that this Appeal be dismissed. Contents? Non-contents? The Contents have it. The judgmissed, and that the Appeal at the Respondent the costs of this Appeal.'

And all is over. Nothing remains for you but to pay the piper. The end is final, and you have only the consolation of reflecting that the highest legal luminaries in the world have, in the most impartial and dispassionate tribunal ever constituted, regarding your case in the light of strict law, and on principles of pure justice—decided that you are in the wrong. It has been a costly experience, but finality is not to be bought

# POMONA.\*

### CHAPTER XX.

Oh, see ye not that bonnie road
That winds about the fernie brae?
That is the road to fair Elfland,
Where thou and I this night must gae.
THOMAS THE RHYMER.

It is three months since Pomona's birthday, and August is brooding hotly over the land, blazing on the poppies and the dusty roads, and throwing great heavy elm-tree shadows on the meadows, and setting the air quivering over the stubble-fields. Those three months have not been unixed happiness to either Pomona or Sage; what fortunate mortal ever had three months' happiness unmixed?

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Lady Lester's life was ebbing gradually away; and after another fortnight of trying to keep up the delusion that she would be better soon, and the pitiful pretence that Pomona was enjoying the season, with all the time an aching heart of anxiety, to be kept hidden like the Spartan boy's fox, though it drove with her in the park, was her partner at all the balls, curtseyed with her at the drawing-room, jarred with its sad voice on the gay music of opera or concert, the girl was allowed to go down to Beechfield to share with the devoted maid the infinitely sweet, sad duty of caring for her mother's weakness and soothing her weariness.

'I have never had you so much to myself before, Mona,' Lady Lester would say; and the girl would hardly be persuaded to leave her room or to move out of reach of her hand.

'Why should I not have been always with you like this?' she used to protest, wondering at the tyrannical yoke under which we wilfully place our necks, filling up our life, short as it is, with a useless, wearisome routine, that is no pleasure or profit to ourselves or any one else, crowding out our real heavilgh parajees.

out our real heart's happiness.

Now and then Lady Lester was well enough to be carried down-stairs, and just once or twice to be drawn in her chair along the terrace, and to stop for half an hour under the great fragrant branches of the cedar, looking with dreamy, faraway eyes at the sunny park, which had a strange unfamiliar look, as familiar things often have to dying eyes, perhaps from looking beyond them to the better country.

That coincidence of Maurice's calling the day Sage was at Beechwood was not anything very remarkable after all, except in Sage not knowing of his being in the neighbourhood, and even that was merely from her failing to realise that Crowcombe Rectory, where Maurice's old uncle lived, was within a drive of Beechfield, and that he and his wife and Lady Lester had known each other for many years. Why, even Pomona had found out that Maurice was related to their old neighbour at Crowcombe, and that, though he had not been there since he was a child, he was not unlikely to be staying there soon, so that it was no great surprise to her to see his card with those of Mr and Mrs Irby.

Since that first meeting with Maurice at Mrs Coppleston's, she had met him repeatedly in that curious way in which, in the stir-about of life, two atoms that have never met before, once brought together, are continually jostling one another in a manner most incomprehensible considering the many millions of atoms concerned. After the first it was not, of course, always accidental that Maurice should be in the park at the time Pomona took her early ride; and after a chance encounter, when Maurice was calling one afternoon at the same time as Pomona at Mrs Coppleston's, that lady gave a helping hand, and took Maurice with her to several houses where she knew Miss Lester was to be met.

And now, by some strange caprice of Dame Fortune, who, like other ladies, appears sometimes the most openly maneuvring of matchmakers, these two were taken out of the gay throng, where Pomona would have been so surrounded by admirers that Maurice would have hardly had a chance to come near her, and sent off, as

it were, to the conservatory, or to sit out on the stairs through ever so many dances, they two by themselves. Pomona, to be sure, was nursing her mother, and Maurice was helping his uncle in some business of a tiresome, pottering description, that at once worried and interested, irritated and amused, the old man. But Crowcombe Rectory and Beechfield are only three miles apart, and Mr Irby often wanted to hear how Lady Lester was; and when Pomona went for her daily walk or ride, on which Lady Lester insisted, what more natural than that those two should meet under the midsummer trees, or in the deep, ferny lanes, or by the lake?

I do not think either Maurice or Pomona realised whither they were drifting during those midsummer days. With Pomona it was part of the strange, unreal life she was leading; ordinary conventional life seemed to be set aside; society and all its works were at a distance; she wore the same cotton frock all day long; there was no grand dinner spread at eight o'clock, but a tray brought up into the old schoolroom any time she pleased; and so there seemed nothing out of the way in her daily meetings with Maurice, and the interest that these deals received to the way that these deals received weather the strength of the sections when the strength of the sections were the strength of the sections when the section of the sections when the section of the sections were sections when the section of th

intimacy that those daily meetings brought about. I am quite sure that at first Maurice had no intention of disloyalty to Sage. It cannot be held disloyal to dream wild, impossible lovely dreams; who can help their dreams? Nor can it be held disloyal in a poet or painter to draw in words or pigments beauty other than that of his own liege lady. Those days were a long intoxicating dream to Maurice, full of a fascination from which there was no escape, even if escape had been desired; they were a poem of sweetest melody, a picture in which he and Pomona were represented as they were in Ludlow's picture. It was always now 'poor, little Sage,' when

It was always now 'poor, little Sage,' when he thought of her, for he did think of her, and wrote too, and more frequently and more tenderly than heretofore. Poor, little Sage! I am afraid, when that feeling of pity begins to creep in, the love is a little on the wane, pity being only akin to love, not by any means the same.

When Maurice and Sage met in London, the day following that on which Sage went to Beechfield, there was much to hear and explain on both sides. Sage found a much more sympathetic listener in him, when she expatiated on Pomona's perfections, than she did in her father. But then, of course, Dr Merridew had not seen her, so could not be expected to understand the charm; and Mr Ludlow's want of appreciation was one of those unaccountable perversities that the most excellent men are subject to. But Maurice agreed with all she said about Pomona in a quite satisfactory way, not too heartily, which is a very mistaken form of agreement, and apt to modify the unlimited praise which might otherwise be bestowed on the object under discussion.

But Maurice did not originate much in Pomona's praise, only echoed, sometimes even with a slight qualification, what Sage said of her, and left Sage with the impression that he would soon admire Pomona almost as much as she did herself, and that she had drawn his attention to several points he had not discovered for himself, though he quite appreciated them.

'And, Maurice,' Sage said, 'I want you to promise that you will not tell Pomona anything

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about our engagement-indeed, you had better not talk to her about me, or it might slip out without your meaning it. I have quite set my heart on telling her myself, and I wonder why I have never told her already, for she is so sympathetic and nice. Do you know, Maurice, I was very near telling my aunt, Lady Lester, all about you, for she guessed, I don't know how, that there was some one I cared for; and she asked if you were very nice, very tender, very true, as if she almost knew all about you already. When I go down again, I will tell her.'

But Sage did not go down again, nor did she see Pomona during the fortnight she remained in London except dressed to go to the drawing-room, a lovely scene of satin and billowy tulle and ostrich feathers and diamond stars, too exquisite to be approached except at a very respectful distance, and too far off for any confidences to be

possible.

Kitty was never tired of hearing that wonderful dress described, and after a few repetitions, Sage found herself making little additions, to heighten the effect. Kitty required a good deal of amusement and humouring in those days, for the headache and loss of appetite had not been so entirely mythical, and Sage found a very feverish, tossing, little person in bed when she came home from Beechfield.

'Maurice must not come,' was Sage's first thought; and Dr Merridew shrugged his shoulders, and wondered if smallpox or the plague would have kept him away from Sage's mother; and Sage, keen in defence of her hero, read the thought, and protested. 'Of course he will want to come; but it's for my own sake I'm going to ask him to stop away. It will make me so anxious and bother me, if he comes; and I don't want to think of anything but little Kit.'

And so she wrote an imperative, little note, smelling strongly of carbolic, and had to write it over again because a sudden tear splashed down unexpectedly on the paper at the thought of how, if she took the fever and died, she would entreat, with her dying breath, that Maurice might not be told, lest he should run the risk of infection.

Of course, that peremptory note had the immediately opposite effect of bringing Maurice to Dalston, as, deep in her deceptive little heart, Sage knew it would do, though she scolded him with tears of loving pride in her eyes for his rashness and disregard of her wishes; and she made such a glorification of his courage and self-devotion all the rest of the day, that Dr Merridew could not resist observing that a doctor did as much and a great deal more every day of his life and thought nothing of it.

'But you will not come again, dear,' she eaded : 'promise me you will not come. I shall pleaded; 'promise me you will not come. I shall really, really be happier if you don't; and I shall be so busy, too, nursing Kitty, it will take up every moment of my time. I will send you a line every day to say how she is; and if you will write sometimes, it will be better even than seeing you, for I shall not feel anxious about you.

Kitty was too ill during the days that followed to allow time for much thought, even of Maurice, in her anxious little nurse; and when the worst was over and Kitty, grown and long-legged and large-eyed, was creeping back to life, Maurice was called away again down to Crowcombe, to

help Mr Irby in that business to which reference has been made, and which brought him again in contact with Pomona, who had gone down to Beechfield a few days previously.

'Have you seen Pomona?' Sage asked in nearly all her letters. 'Have you been to Beechfield? Have you heard how Lady Lester is?'

And sometimes in his reply Maurice would mention that he had met Miss Lester, who looked well; or that his aunt had driven over to ask for Lady Lester, who was rather better; but he did not think it necessary—and why should he ?—to recount how these meetings with Pomona were almost of daily occurrence. Nor did he relate how one afternoon, when he had called to inquire, Lady Lester had been on the terrace, and by some strange caprice, seeing that she had not seen any of her most intimate friends for weeks, expressed a wish to see him. He had sat for a few minutes on the stone balustrade by the side of her chair, under the great dark cedar at the end of the terrace, and she had smiled at him with the wan loveliness over which the cold shadow of death seemed already falling. He had helped to move her chair when she was tired and wanted to go in; and he had done it so gently and skilfully, that she had thanked him, and said she had never crossed the terrace with so little shaking. As she bade him good-bye, she smiled at him with a kindness out of proportion to the small service he had done her; and with a sudden impulse, he stooped and kissed the transparent hand that lay in his, and turned away with a strangely beating heart and unaccountable agitation, feeling as if, without a word, some understanding had been come to between them, some trust had been conferred and accepted; and meeting Pomona coming in from the terrace with a shawl that had been dropped, he took it almost authoritatively out of her hand, as if he had a right to care for her.

He went back to Crowcombe that evening more in a dream than ever, spell-bound by the magic of the great enchantress, love, with whose power he had often played, and whose growing bonds he had lightly twisted about him, conscious that at any moment he could break loose from them, like Samson from the Philistines' new cords. But now, like Samson shorn of his strength, he could no longer go out as before and shake himself free.

Mr Irby won every game of backgammon that evening, which was a great gratification to the old man, till he began to suspect that Maurice was not paying any attention to the game, which robbed his triumph of half its splendour; and his gentle old wife had to intervene with the bedroom candles to prevent an outburst of irritability.

'It was my fault, Richard, for I quite forgot

to give him the letter that came by the second post, and I expect his thoughts were with his

young lady in London.

Oh! poor little Sage, I wish it had been so!

### CHAPTER XXI.

Our eyes see all around in gloom or glow— Hues of their own, fresh borrow'd from the heart. KEBLE.

'DEAR LUDLOW-Thank you very much for your proposal that Kitty should come and recruit at Scar. She does not pick up so quickly as I should like and expected; and Sage, too, is not up to the mark, overdone a bit with the nursing and in

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anxiety about Kitty, though she declares she is all right; and I think sea air will do them both good. The boys are going with their cousins to Broadstairs; so I will pack off the two girls to you the beginning of the week, and thank you heartily for the invitation.—Yours sincerely,

JOHN MERRIDEW.'

There is a legend that ladies always put the most important part of their letter in the post-script, and I think men sometimes do the same, for in this instance Dr Merridew added: 'Do you hear anything of your young friend, Moore ?'

Back again at Scar! Both Sage and Kitty would have declared any time since they left it, last September, that it was the one thing of

all others they desired.

There was little alteration at Scar Farm since last year, except that Mrs Stock came out to meet them with a widow's cap surrounding her kind little face; and Job's coat no longer hung on the kitchen door, or his pipe on the mantel-piece, and all the bedrooms were adorned with a blackframed funeral card with a weeping willow and an urn, and a long inscription in the farmer's Otherwise, the death of the master made little difference in the house or in the farm either, where, as a matter of fact, Mrs Stock had done

most of the business for years past.

The studio was in no way altered; and in the bow window was spread just such another attractive-looking tea as had so often invited the attention of the Merridews' healthy appetites, but attention of the Merridews' healthy appetites, but which now had no charms for poor Kitty, and to which also Sage could not attend till she had got her patient safely to bed. Even then, she sat longer than was necessary by Kitty's bedside, with an unusual shrinking from a tête-à-tête with her friend; and she had half a mind to ask Mrs Stock to bring her some supper up-stairs, and tell Mr Ludlow she did not like to leave Kitty. But it must be done sooner or later, and she might as well to-day as to-morrow face the inevitable question: 'Well, how is Maurice? When did you hear from him last?'

But after all, she had not to answer that question, for Mr Ludlow did not mention Maurice till tea was done, and then he said: 'I heard from Maurice this morning. I asked him to come down for a bit while you are here; and he hopes

to do so.

Just think what this silly little Sage would have missed if she had decided not to come down. She would have missed a beautiful, beautiful evening, with a sunset as heavenly as any of last year's, even that at the Landslip; the exquisite delight of seeing it all again unchanged, of meeting the old friends, of passing down the village street and getting a greeting from almost every door; finding her way to the beach, and seeing the grand old Scar Head growing dusky against the orange sky, just as it did that evening when some one had come out of the very sunset.
'Why, Sage,' Ludlow said, 'I do believe Scar

air has done you good already. You don't look the same girl I met just now at Shingle

Station.'

about Maurice had worked the cure, brought the light into her eyes and the colour into her cheeks, painted the sunset with more vivid erimson and gold, cast a glory over the sea, put a music into the gruff greetings, a sweetness into the air, and an additional grandeur to the rugged

Sage felt a wild exuberance of spirits, which was hardly natural to her, being generally of a placid, undemonstrative nature, and enjoying things quietly; but this was the result of a sudden rebound from the depression that had been growing on her for the last month. It was all very well for her to go on telling herself over and over again that everything was quite as it should be; that she would much rather Maurice kept quite clear of all risk of infection, and that he only did so because she had so earnestly implored She could not help now and then putting herself in his place, and wondering if commands or entreaties or even threats would have kept her away if he had been breathing infected air? Of course he was away from London; but sometimes, when she could not sleep, and the nights were hot and breathless, and Kitty was restless and fretful, and the inexhaustible patience of the tender little nurse was sorely tried, she would have a slight rebellious swelling at the heart, with the thought of what a short journey it was up from Crowcombe, and of how soothing it would be to an aching head to rest for a minute or two on his shoulder. His letters, too, had been less frequent of late, which was another thing she severely contested with herself that she much preferred; she would not for worlds that he should feel obliged to write; and yet-and yetif only he had known how, after one of those bad nights with Kitty, which invariably were followed by a day of great prostration, the sight of a letter on the table made life easier, and hope and cheerfulness more possible, he would have been glad to write constantly.

He sent her a box of flowers now and then, the kindness of which she exaggerated, poor little soul, to something quite heroic, though, man-like, he packed them so badly, usually also selecting geraniums for the purpose, that they were all knocked to pieces in the post, and presented a poor appearance when taken out by her grateful fingers.

When the idea of going to Scar was first mooted, Sage was quite sure that Maurice would come up to see her before they started, even if he did not travel down with them. But he only wrote to say how glad he was they were going down to Scar, and that he hoped the sea-breezes would soon set Kitty up again. He had not said a word about there being any chance of his coming to Scar, but that, Sage told herself now, was just like him, so that it should be a delightful surprise to her. And this also accounted for his not coming up before she left London, as, of course, they would meet so soon that it was not worth while.

Oh, the difference the prospect of his coming made in everything! Little Scar and the great cliff beyond and the wide sea and the sunset sky need have felt no vanity from Sage's rapturously And she answered with a laugh of great happiness: 'I don't feel the same.' But she did not go on to explain that those few words of his have looked quite as beautiful to her if she had expected to see Maurice Moore walking up the street.

Owen Ludlow noticed the change in her with great content, and as he sat on the great rock by her side and heard her gay young voice chattering on with more life and merriment in its tones than was usual to it, he felt greatly relieved and reassured that it was only fatigue and anxiety about Kitty that had made her look so white and large-eyed and out of spirits when she first arrived.

'I must have as much of you as I can, little Sage,' he said, as they slowly climbed the steep little street where lights twinkled out from small windows and open doors at which stood groups of men who bade them a gruff good-night. 'I must have as much of you as I can; for when Maurice comes, he will monopolise my little friend, I expect, and I shall be left in the lurch.'

And Sage laughed a happy little laugh, and passed her hand coaxingly under Ludlow's arm. It was so pleasant once more to have it taken for granted that Maurice would want to monopolise her; there had been very little symptom of such a desire of late.

'When will he come?'

'Oh, very soon, very soon,' the painter said, pressing the little hand against his side. 'I'll wager that I shan't be allowed more than a day or two of my little friend's company.'

And Sage went up to bed with those words 'Very soon, very soon,' ringing in her ears, keeping time to her footsteps, that were fain to dance for very happiness on the creaking boards of the farmhouse staircase.

# LEATHERN WINGS.

By FRANK FINN, F.Z.S.

In marvelling at the strange forms of extinct animals which science is constantly bringing before us, we are apt to forget that many living creatures are quite as wonderful as those which the Pterodactyls, for instance, are not more strangely removed in structure and habits from their reptilian relations than are the modern bats from other beasts. In all essential points near relatives of such humble earth-dwellers as the hedgehog, mole, and shrew, the bats are nevertheless far the most aërial of vertebrate animals at the present day. Not one of them is as well fitted for walking as for flight; the membrane which joins the long fingers, leaving only the thumb free, extends down the animal's sides to his ankles and between the legs, so distorting those members that in their owner's ungraceful hobble on the ground his knees stick upwards and outwards. Thus, though he is more at ease when climbing, and can suspend himself comfortably by either thumb- or toe-nails, the greater part of the bat's waking life is spent on the wing. In the air he is most at home, and displays powers of flight far greater than those of most birds. He may not have the speed and endurance of some of the feathered folk; but for facility of evolution in a confined space he would be difficult to rival, as any one will admit who has had a bat-hunt in a room.

Two experiences of my own rise vividly before

me as I write. In the first instance, the bat was a 'flying-fox' of about the size of a pigeon, which one night entered my bedroom in a Zanzibar hotel. Becoming conscious in the darkness that some flying creature was passing and repassing over my head, I got out of bed and lighted the lamp, and found my visitor performing the circuit of the room with a steady even flight, very different from the flittering progress of our own the mittle species. He will soon get tired of that, I thought; and closing the windows, sat down to wait till he should be wearied, and allow me to capture him for the Zoo at home. Several minutes passed, and I began to think more active measures necessary, as he showed no signs of sinking exhausted; so, seizing a mosquito net, I started on an impromptu fox-hunt. I don't know how long it lasted, but the quarry put the light out twice by his flapping pinions, showed most disconcerting agility in rising from the floor and unhitching himself from the wall, when he was brought down or settled to rest, and finally escaped through a crevice in the partywall which separated me from a passage with an open window. Whereon I sought again my virtuous couch, vexed and perspiring, but with a greatly increased respect for a bat's power of

My next bat-fowling experience was a rather different one, though the result was the same. The species in this case was our English long-eared bat, and the scene of the hunt a room in a laboratory, whither I had gone with a friend to work at night. Wishing to examine the little creature alive, and then release it, we pursued it with dusters for about an hour. At the end of that time, as we were far more exhausted than the bat, and had lodged most of the dusters on the top of a high cupboard, it occurred to my companion that he did not want to catch the poor thing, and we opened the window and left it to

its own devices.

In addition to displaying such activity on the wing, bats have considerable power of extended flight, the Indian flying-fox having been known to board a ship two hundred miles from land; and they are found, with birds, on very small and remote oceanic islands. These they must have reached by fair flight, unless they had the good fortune to meet with a floating log; for, though a bat swims well, it would probably find much difficulty in rising from the water, did it settle to rest, as many birds are known to do.

Yet, though the bat has so well won its way to what is popularly supposed to be the realm of the birds, it has not received much favourable recognition from humanity, which lavishes adulation on the undeserving. For 'the light-minded fowl,' as a Greek dramatist calls them, treat their gift of wings with a sad lack of appreciation. Let a bird get on an oceanic island free from terrestrial foes, and unless it is obliged to fly for its food, it proceeds to wax fat and lazy, and in the end loses its power of flight altogether. It finds out the short-sightedness of this policy when, in after-ages, man arrives at that island. But that is by the way.

The bat's weakness, however, as well as its strength, lies in its wings. If the delicate finger-bones, which stretch the membrane like umbrellaribs, or the membrane itself, be damaged, the

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animal is disabled. Indeed, a method of capturing bats practised by the inhabitants of some of the South Sea islands shows that the wily savage has appreciated this. Armed with a thorny bush on the end of a long bamboo, he stealthily approaches a flying-fox which has settled to feed on a fruit-tree, when a dexterous blow will tear the bat's skinny wing and bring it to the ground, an acceptable addition to the hunter's commis-sariat. The flying-foxes are relished as food by the inhabitants of the countries where they are found; and certainly a creature which lives on fruit ought to be good eating. Their heads are wonderfully like that of a miniature fox; and their large eyes suggest that they find their way by sight, of which sense the small insectivorous bats would seem to be almost independent, as blinded specimens, in the experiments of Spallanzani, proved to be able to avoid obstacles to their flight as easily as those which could see. This power bats owe to their highly developed sense of touch, the large sensitive surface offered to the atmosphere by the broad naked wings enabling them to perceive an object before they touch it, probably by the difference in the resistance of the air. And the huge ears and complicated noseappendages found in so many insectivorous species also subserve the purpose of guidance, though they certainly do not add to the animal's appearance, the facial aspect of some bats being past description hideous, while they are just as offensive to the nose as to the eye. One very ugly naked species exhales so detestable a periume from a pouch under its chin, that an artist who was taking the portrait of one of these delectable animals was almost made sick by the stench. One cannot wonder that the attributes of the blood-sucking vampir: have been wrongly given to several hideous American bats, especially to that species named 'Vampyrus spectrum,' from a mistaken notion, indeed, since it is frugivorous. There being no flying-foxes in the New World, some of the insecteaters have adapted themselves to a fruit diet.

Nevertheless, two species have been proved to suck the blood of other animals, though these are not nearly so ill-looking as some of their harmless relations. And in the Old World there are bats which prey on the smaller members of their own family, and on other creatures that they can catch, such as birds and frogs. Considering the general attributes of the bat-kind, it is not to be wondered at that mankind should have borrowed their claws and angular wings wherewith to garnish those grotesque creations of the imagination known as dragons. It is true that it has been suggested that the Pterodactyls gave the first idea of dragons to humanity; but this is unlikely. In the first place, several geological periods intervene between the last Pterodactyl and the first man; and in the second place, the artistic mind notoriously revels in the production of monsters whereof it may be just as safely affirmed that they never could have existed, as that they never did. It has given the 'worm' of our ancestors a rhinocerotic head, birds' feet, and an incandescent breath—why, therefore, should it flee to fossils for the paltry detail of wings, when the bat was close at hand to supply them?

Nevertheless, it must be admitted that the Pterodactyls were somewhat dragon-like, especi-

ally the larger species; for though most were of moderate size, not exceeding that of a crow or a flying-fox, and some, even, no larger than sparrows, yet the largest attained a spread of wing of more than four fathoms. These wings, though like than four fathoms. These wings, though like those of the bats in being expansions of the skin extending to the limbs, differed from them somewhat in detail. In the bat we have a free thumb and four immensely lengthened fingers; in the Pterodactyl the fingers were free from the wing membrane, except that corresponding to our little finger. This in the volant reptile was the largest of all, a long, tapering, jointed rod of bone, and the main support of the wing, which was a long and narrow one, something like that of a swallow in outline. As the Pterodactyl's hind-limbs, like those of the bat, are weak and more or less involved in the wing-membrane, it is extremely unlikely that it could sit up and perch or walk like a bird, as some have suggested; its terrestrial or arboreal promenades, therefore, more probably took the form of a bat-like crawl on all-fours. Its head, however, was more like a bird's than a bat's, having a long snout, armed with teeth or a beak, or both, and large eyes. insects, and probably also on fish, the Pterodactyls must have borne some resemblance, when on the wing, to the terns or sea-swallows of our own day, with their large heads and long narrow wings. Whether, as they wheeled and swooped over a shoal of fish driven to the surface of the sea by the rush of the great reptilian whales of the period, they indulged in the vocal performances of the modern sea-bird, is of course only a matter for speculation. Probably they were more gifted with voice than our modern reptiles. And these are not entirely dumb, as the bellowing alligator and chattering house-lizard prove; while, on the other hand, some birds have got no further than the well-known reptilian hiss. To talk of the colours of Pterodactyls may also seem to recall the method of the German scientist who, in the solitude of his study, evolved the camel out of his inner consciousness; yet we constantly find that the more aërial creatures are the more brightly decorated; the little 'flying-dragons' of the present day, lizards whose long movable ribs support a skinny parachute, are as gaily coloured as butterflies, while even their terrestrial relatives are often exceedingly beautiful. So that it is more than possible that some at least of the Pterodactyls, like Mr Oscar Wilde's dove, rejoiced in 'silvered wing and amethystine throat.

Speculation fails us somewhat, however, when we begin to inquire into the origin of these old pliers of leathern pinions. The links which bind these strange creatures to other reptiles are wanting. And, curiously enough, as far as fossils go, the case is similar with the bats; for all fossil bats are just as truly bats as are the living species. Fortunately, however, there exists a 'living fossil,' which, though it could not have been the ancestor of these flying beasts, yet very clearly points out the way in which such anomalous creatures might be developed. This is the Galeopithecus of the East Indies, a creature which is neither cat nor bat nor lemur, and yet has been at different times called by all these names, and finally herded with the mole and shrew tribe, mainly because it will not fit in anywhere else. It is a tree-climber, and apparently a vegetable feeder, and is one of

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those creatures which fly by a parachute formed by a flap of skin along the sides, extended by the limbs; the most perfect of parachutists, for this web extends between the hind-legs and between the toes, enabling the animal to glide as far as seventy yards at a time. Besides some points in its internal anatomy, the webbed hind-feet forbid us to regard the 'cat-monkey' as a surviving incipient bat; but, nevertheless, from some form very much like it we may easily imagine that the present rivals of the birds were developed. That leather will ever surpass feathers as a material for wings is very unlikely; the Pterodactyls, though in the height of their power when the birds began in the feeble-winged, half-reptilian Archæopteryx, have yet entirely died out ages ago, without leaving any descendants. Skin-winged reptiles had reached their highest perfection, and a different stock supplanted them, which flew by feathers. One reason of this may have been that a feather-wing is so much less liable to irreparable injury than one of membrane; and the Pterodactyl's wing, stretched on a single sup-port, must have been thrown out of gear even more easily than a bat's. Were not birds essentially creatures of the day, for true night-fliers are few among them in proportion to the many that love the light, it is possible that the bats themselves might never have conquered their present share of the empire of the air.

# LESS THAN KIN.

### CHAPTER II.

TWENTY years bring changes into all lives, and those of Mildred and Charles Russell were not likely to be exempt from the universal law. The vicarage of Denleigh, which had been their home for all that time, had been the scene of both births and deaths; and by the time that their eldest son was twenty-five, and Ena a pretty, gray-eyed damsel of twenty, there was but one other child, Bijou, a fragile, petulant, self-willed, little mortal of twelve, left to share with the other two their parents' love. For that she had not an equal claim with Dick to talk of 'father and mother,' Ena never dreamt.

The immediate removal of the family from the Hampshire curacy to the Yorkshire town had of course made the keeping of Jack's secret a comparatively easy matter; the more so since, from the day he received it until the present, Sir George Daintry had deigned to take no notice of the letter which gave him information as to the existence and present position of his grandchild. So Ena had grown up exactly as her father desired, regarding herself as the eldest daughter of the house, and claiming as her right the affection which she most fully returned. Never for one moment had either husband or wife regretted the adoption of the baby, who had won for herself so warm a corner in their hearts.

As to Dick, before he left home, four years ago, he had believed that the world contained no one so bright and helpful and lovely as his sister Ena. In which, of course, he was mistaken. But his was a pardonable error, and one to be rather cultivated than discouraged on the part of brothers as a race.

Except for the loss of the little ones, upon whose waxen faces hot tears had fallen, and each of whom existed still as a memory in at least two hearts, poverty had been the one trouble that had fallen upon the vicarage. The small private means which had emboldened Mr Russell to accept his present incumbency had some time ago been swallowed up in the failure of a bank. Happily, Dick had then just completed his university course, and was already looking out for a tutorship, which might tide over the period that must elapse before he should be of age to follow in his father's footsteps and take Holy Orders. And upon the very morning that brought tidings of the crash, there came also a definite offer of a post, with a salary so tempting that, under the circumstances, it could not be refused; even although the condition attached to it-that he must undertake not to leave his pupil until the boy of thirteen should have passed his seventeenth birthday—must have the effect of delaying Dick's own ordination.

The lad of whom he thus received the charge was extremely delicate, requiring constant change of air and scene, always away from England. Therefore their long companion-ship, now drawing to a close, had been spent by both pupil and tutor in almost incessant within sight of home. And at the present moment, when Dick's long-desired return was actually approaching, there was much anticipation and counting of days in Denleigh vicar-

'No letter this morning from him,' remarked Ena, standing, tall and slim, beside the already deserted breakfast table, and turning over the small pile of recently arrived correspondence. 'I daresay that Frank Roberts has taken him

off on a fresh wildgoose chase to the other end of the world, grumbled Bijou, of the long lashes, and
—truth to tell—rather vain air. 'Dick isn't free for three weeks yet, remember, and that boy will have his pound of flesh!'

'What an unpleasant comparison,' remarked her father, who had just entered; 'and specially in regard to Frank Roberts, who really has been as good as gold to Dick.—Milly, my dear, apropos of gold, pray, where did you put that money that I left on my study table yesterday morning?—And, Ena, will you get out my thin overcoat? Really it is too warm for the thick one, now that May is in.'

'Shall I put away the other, dad?'

'No. I've hung it in my wardrobe, and let it

even yet.—But about the money, Mildred?

'I didn't see any, Charlie. I wish I had!'
with just her old, merry laugh. 'How much and what was it for?—Don't look so bothered, old fellow.

But really I am bothered. It was too large a sum to lose, dear. Wakelin brought it yesterday for the pupil-teachers' salaries, and that I might get rid of the National Society's account. There was over twenty pounds. I must have left it on my table, when I was called away to baptise Mrs Brown's child. I paid Clarke on my way home, I remember.'
Mildred nodded. Clearly, she understood all

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'When I returned, the other matter had escaped my memory completely. The money must have gone though, during my absence, or the sight of such a pile would have reminded me. I never thought of it again until I wanted to take it down to the schools, and then it had vanished. Only I made sure that you had it.'

'Not I!—But you've dropped it inside a drawer or somewhere. I'll come and help you to hunt.' With which she slipped her arm through his, and rubbing her head caressingly against his shoulder, looked up into his worried countenance with a smile. If any one could chase away gloominess from that face, where of late years clouds were apt sometimes to gather too quickly, it was certainly Mildred; just as surely as Charles was her consoler in those moments of weariness and depression which fall to the lot of high-spirited beings like herself

'It will be in the middle drawer, at the top of everything. Now see if I am not right!' she told him cheerily.

But the prophecy unfortunately proved a false one. And even Mrs Russell began to look grave when, after emptying every familiar receptacle and customary hiding-place, she had to acknowledge that if her husband had, in a fit of abstraction, deposited the money in some safe corner, he must have taken remarkable pains in making a selection.

in making a selection.
'I wouldn't care so much if Wakelin hadn't had a hand in it. But he is always so par-

ticularly unpleasant to deal with.'

'Not much worse than some of the rest,'
responded Mrs Russell. For the south-countrybred folk had never grown accustomed to their
north-country parishioners, with whom, on their
side, neither of the pair were favourites. And
the constant intercourse with the brusque, unrefined neighbours had neither blinded 't' passon'
to Yorkshire failings nor altogether opened Yorkshire eyes to Hampshire virtues. Hence a state
of constant friction, as unsatisfactory as it was
irritating.

'Found it, mother?' came at that moment in Ena's bright voice, as she stood in the doorway. 'No? Then let us call Jane. She may have moved it.'

But Jane, a respectable, middle-aged woman of scrupulous honesty, which had stood the test of ten years in her present situation, professed herself as ignorant as the rest of the world. And gradually perplexity merged into anxiety.

'I must be off; my chicks will be waiting,' cried Ena at last. During eighteen months she had held the post of governess to the two young daughters of the same Mr Wakelin whom the vicar had just characterised as 'particularly unpleasant.' But, whatever the father's faults, Ena loved the children, and anticipated with genuine pleasure the hours spent each day in their instruction.

It was a large and important as well as perfectly new house, that towards which, five minutes later, she was hastening

later, she was hastening.
'None o' your old, nasty, pokey cribs for me,'
Joseph Wakelin had declared, immediately after
the lucky coup in iron which had brought him

his fortune. Whereupon he had set to work to build this red brick, imposing, comfortable, vulgar edifice, which he had then stuffed full of furniture, upholstered in startling colours, but affording the maximum of physical ease. Nowhere could sofas and couches be found of less artistic form, of cruder hue, or with more irreproachable springs and cushions than at 'The Hall,' the designation displayed in scrolls of iron-work above every gate.

It so happened that, quite out of the usual order of things, Ena that morning encountered the master of all this splendour upon his own doorstep.

'Late, ain't I?' he exclaimed, recognising her presence by a simple nod. But Ena was not so thin-skinned as Mildred. Possibly residence amongst these folk from childhood had blunted her perception of their peculiarities. 'Wasn't particular bright this morning, so I slept in. The changes in the weather don't suit me. It's like a furnace to-day, and so it was yesterday. How your father manages to walk about in that Inverness of his beats me!' Ena laughed. The vicar's hatred of the cold

Ena laughed. The vicar's hatred of the cold was a constant source of wonder to his hardier

'He's got his thinner coat to-day,' she retorted.
'Even he thought the other too heavy. I hope you'll be all right soon.'

'Thanks. By the way, if I go to the schools, shall I be likely to find his reverence? I rather fancy the walk there instead of going to the office, with a guffaw at his own confession of idleness.

'I trust so, I'm sure. But when I started, all the house was upset searching for the pupil-teachers' salary money. You know the vicar's way of mislaying things; and money is no exception.' With which she passed on, never guessing at the suspicions already at work within her employer's brain.

'And that chap Clarke is bothering for his bill. What made Russell so bloomin' pressing to have cash instead of a cheque, as he always has had afore? I've fancied at whiles as pride would have a fall. Maybe it's tumbling now.' And though he did not add 'Hope as much!' it is quite probable that his sentiments ran in that direction. His resentment that the vicar would never admit him to the confidence and intimacy of an equal—for class-pride was certainly as great a failing upon the part of Charles Russell as was purse-pride upon that of Joseph Wakelin—had long ago influenced his mind against the man whose whole annual wealth would not have afforded him a week's income. To be able to despise the clergyman as he believed that he was despised—such was his pet though unacknowledged ambition. Almost he fancied that he saw his way to its fulfilment when, twenty-four hours later, he sat and talked over the strange occurrence of the vanished money with the vicar in his study.

'I can find the coin nowhere. Mrs Russell and I have searched the house from cellar to garret. If it had flown to the clouds it could not have disappeared more unaccountably,' exclaimed the clergyman, whose pallid face and red-rimmed eyes told of a sleepless night. 'I can't imagine what to do next in the matter.'

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'Denv? What do you mean, sir?' firing up 'Of course I had it. Your insinuainstantly.

'Oh, blow my insinocation,' coarsely.

about burglars ?

Charles Russell drew himself up; but, though his voice was cold and his face hard, he still replied to the question. In truth, he understood already the false position in which this loss had placed him, and realised that his reputation demanded an answer to all inquiries, howsoever unpleasant.

Very unlikely, though still possible. The window is not on the ground-floor. And any one entering from the hall during the daytime could scarcely fail to be observed. Though, as I have said, it is just possible that might have been

managed.

'And servants?'

'There is only Jane. All the parish is acquainted with her, and would vouch for her integrity. No! Whoever was the thief, it was

not Jane.

'He's a fool,' the other decided, listening and 'Has he used it? At least he'd better watching. try and throw the blame somewhere. But no! He'll save his conscience that far.' Then aloud, with a look of the utmost insolence: 'So the scamp is as usual "Mr Nobody, or the cat"with a scoffing laugh that positively chilled the blood in his companion's veins. This man, with all his presumption, would never venture to behave with such freedom had not his vicar fallen very low in his estimation. So the clergyman believed, at any rate. But even now he was not prepared for what was to follow.

'Look here, Russell,' the other said, bending forward in his chair and speaking with a show of indulgent good-nature. 'I understand, I'm just as cocksure as you are that Clarke's bill was settled within an hour after I left this house! I'm out and out certain, too, that you haven't twenty pounds to repay-well, call it the loan! You make a friend of me, and I'll do my best for you. Come now. "Tain't every man

would, after as much.'

Nor, had the confidence been accorded, would he have betrayed the trust. Only to be recognised and acknowledged by the vicar as a bene-factor was his sole desire. He had really no wish to lower the cleric in the eyes of the world, or to see pretty Ena's father—he was quite fond of Ena, he assured himself at this point—publicly dishonoured.

For a few seconds there was silence in the room, a silence which could be felt. Then, very slowly, and with a face of ashen whiteness, Charles Russell rose to his feet. 'Sir! Mr Charles Russell rose to his feet. 'Sir! Mr Wakelin!' he thundered. 'Do you dare to harbour such an opinion of me, and to tell me of it to my face? Go! pointing to the door, 'go, and do your worst! But never cross my threshold again.—Go!' as the other, in pure astonishment at the outburst, remained motionless. 'Again I command you, go, lest I forget my office, and kick you out of the door!' 'Father, there's a gentleman named Daintry

down-stairs in the drawing-room, who is very anxious—Oh, I beg your pardon! I thought you were alone,' were the words that interrupted this crisis, giving Mr Wakelin time to gather his

wits together, and falling like cooling drops upon the flame of the clergyman's ire. But it was the manufacturer who replied to Ena's announcement.

'He will be in a second! I'm off! And don't you suppose I'll ever bother you with another offer of help. Miss Russell, you needn't come to my house again. The missis can find some un better than a thief's daughter to teach my little gals. Good-morning to you.' With which parting shot he departed, stamping down the stairs in a fury, and slamming the hall door behind him; yet carrying away a conviction, which had been growing stronger during every moment of the interview, a conviction of Charles Russell's entire innocence. That it was a conviction which he intended neither to act upon nor admit, did not in the least prevent his recognition of its presence in his most unwilling mind.

# 'BARRA IN THE MINCH.'

'THE real Barra is in the Minch,' said the speaker sententiously; and then added, with emphasis, 'the real, rich, valuable Barra is under the sea; the rock they call Barra is only for the

huts and the landing of the boats.'

While there is much truth in this, where a fleet of six or seven hundred splendid herringboats fill Castle Bay with wealth and activity, yet there is another Barra above water of much interest. Although 'far amid the melancholy main.' with the solan geese from St Kilda flitting constantly about it, the island is by no means the miserable rock we are occasionally informed by those who have not made it a study, or who have only seen the herring-debris-covered rocks. bay itself, formed by the island of Vatersay, lying opposite, is a splendid haven; and the old castle of the M'Neills on the islet off the pier gives a look of picturesque antiquity to the general view. Vatersay sands whiten and brighten the opposite shore of this great herring centre. The North Harbour is scarcely inferior to Castle Bay itself, and enables every portion of the waters surrounding, whether towards the Atlantic or the Minch, to be fished with safety. Although little over a thousand feet in height, the position of the island makes the view extensive and commanding; and during the herring-fishing season it is also a wonderfully busy and interesting scene that presents itself to the eye from the summit. Laurentian rocks have been triturated by the constant gales rubbing the loose stones and particles violently together, until considerable humus has been formed in places; while the western shore is a magnificent stretch of the finest sand, that is ever shifting and lifting under the restless winds and waves. These sands were a constant source of danger to the adjoining arable land, where the western valley slopes to the sea, until a former factor succeeded in fixing the higher stretches by planting bent thereon. This has continued to extend, with its long siliceous roots that bind the shifty particles together, until a great extension of grazing land has succeeded.

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Over this ground the botanist may ramble with amazement and delight, wondering how, even in the early spring, when Skye is black and dreary, these inner sands are rich in verdure and gay with flowers. This is the more surprising as the sands are mostly siliceous, with far less admixture of disintegrated shells than might have been For the wild coast outside only anticipated. permits the limpet to flourish, and even these are few in number, and must maintain a most precarious existence. But the mild air, moistureladen from the south-west, however violent at times, is kindly in its result; and even amid the apparently barren rocks of Castle Bay, flowering plants are numerous throughout the year. One gentleman in July gathered somewhere about two hundred; whilst a party of students in a few hours' ramble round the island during August collected within twenty-five of the same number. Wherever any humus had gathered, these plants were numerous and varied. To this humus the sea has added to an important extent, more especially within the last generation. For the great herring and cod and ling fisheries mean a collection of debris sufficient to enrich a great extent of arable land if properly employed. But here we find a strange commingling of care and recklessness on the part of the inhabitants, who fight violently over every square yard of land, and yet throw into the sea the hundreds of tons of herring garbage that ought to be transferred from 'Barra in the Minch' to Barra that rears its head above it.

The people of Barra are a race of hardy seafarers, and are admirable boatmen, while they possess a very considerable stock of clever ponies among them. These ponies are considered the lineal descendants of the Spanish ponies of the Armada, and have always been famous trotters across the mile of sand of Cockle Bay which is their favourite raceground. The ponies, too, have done the work elsewhere allocated to the women in the Hebrides, and with their panniers have carried the peats from the higher moors to the clachans. The crupper spoils the look of the ponies for sale, unless caught at an early age; but the use of these animals has probably been beneficial to the women, saving them from exhausting hard work when very young. However this may be, the men of Barra do not compare in physique with those of Lewis, whose women undergo the burden and heat of the day to a greater extent.

In old days the food of the people is said to have largely consisted of cockles boiled in milk; but of late years a large business has been done in sending tons of cockles from the famous bay to the English markets. Great recklessness has as usual been shown in the depletion of these beds, whenever the prospect of gain stimulates the regardless use of what is common property. So long as they were only used for local consumption, they stood the strain for centuries; but when shipped without consideration in the wrong

season, and no care given to the beds, the result has been very injurious, and may remain so for a

In the old 'kitchen middens' of some extent in the west, shellfish are the prevalent remains, along with occasional fragments of the antlers of the deer. These could scarcely have belonged to this small island, and were probably the result of raids elsewhere by the turbulent M'Neills, whose stronghold on an islet in the sea rather points to a race of seafarers. Indeed, whoever seeks to enjoy Barra must be almost amphibious. Peat grows plentifully on the western slopes, and assumes strange appearances where the swift streamlets from the heights undermine it in long subterranean passages, with occasional larger cuttings, as if underground dwellings were about.

The pasturage, as we have seen, is rich and varied, and a fine stock of Highland cattle browse on the north end of the island, which herd at one time belonged to a brother of the famous Macgillivray, whose classic descriptions of the haunts of the sea-fowl may have been largely gathered from these wild Hebridean shores.

Barra out of the Minch is indeed well deserving of closer study, while 'Barra in the Minch' has not yet been developed to its fullest possibilities. This quaint corner is an epitome of the old times and the new. The fish-pond alongside the old castle, with the garden near the shore opposite in a little dell, are indications of the mode of existence of the chief; while the huts of loose stones and turf, the thatch green with verdure, the oats and potatoes scrambling amongst the rocks, tell of the desperate struggle for existence of the old-time vassal. Then the old broch nodding at the Atlantic tells of a still prior ownership; while the M'Neills' judgment-seat, with the place of execution just behind, recalls the rude prompt autocracy of the feudal times.

A short stroll leads to the less picturesque but more important modern conditions, where rival curers have erected wooden shanties, and piers, and curing-houses; and the air, and rocks, and water force on nose, and feet, and eyes the presence of King Herring. It brings into the island much money; it eliminates the old-world simplicity and purity of life. Although Roman Catholicism still controls the multitude, and the bottle of holy-water is hung on the bow of the boat, contact with the outer world has emancipated the minds of the people to a large extent. They still potter away over a few yards of oats or a patch of potatoland. They still spend too much time with their hands in their pockets. They still remain too hands in their pockets. They still remain too often ashore when they might do well digging deep from 'Barra in the Minch,' But this time of transition will pass. They have become dissatisfied with their condition; this will lead to dissatisfaction with themselves, the first stimulus The steamer of The Island to future advance. Route has been gradually creating a new Barra, and a small town has already replaced the clachan of a dozen years ago. The failing fisheries will return, and 'Barra in the Minch' be gradually transferred to Barra that so boldly and gracefully dominates the western seas.

There is an admirable and well-managed modern hotel, built by Lady Gordon Catheart, to develop the island; so that no inconvenience need be experienced by the ordinary visitor. A run

from Oban, therefore, can be readily made, and a dip taken, with little hardship on a summer day, into quaint old-world conditions far removed from the experience of the ordinary citizen.

# MORE HOSPITAL STORIES.

POLICEMEN IN HOSPITAL

By G. B. BURGIN.

POLICEMAN X 274 was inclined to be pessimistic, although convalescent. Whenever I could spare time from my other duties in the hospital, I would run into his ward and remind him that although he had been hard hit by a brick on the back of the head in a street row, life still had its compensations. There yet remained a little formality to be gone through on his complete recovery, when he was to be presented with a small cheque by the presiding magistrate of his district for having tackled Redheaded Mike single-handed, and utterly unmindful of the affectionate tokens of regard showered down on him in the shape of anything which came handy by the enthusiastic friends of that Hibernian swash-buckler. One of these tokens—namely, the brick—had smashed in his head; but the head of Policeman X 274 was very thick; so was his helmet; hence the brick had only incapacitated the worthy policeman from duty for some two months, and not 'kilt him entoirely.'
Still, Policeman X 274 remained pessimistic.
He said that the brick had not only upset him, but his theories as well, and that he now felt it his duty to become an ardent Conservative. This was after I had enlarged on the practical part of Socialism to be met with in London slums. Policeman X 274 raised himself up in bed, and waving an imaginary truncheon, delivered himself thus:

'You'll excuse me, ma'am, for contradicting my betters; but Socialism's mostly talk. So is all other "Isms," if you looks into 'em on your beat of rainy nights, when you've got time to think things out. Folks preaches Socialism and travels first-class. When a man here and there acts up to it, he's mostly queer in his head, and we generally runs him in. They all talks of going shares, these Socialists; but it's mostly other men's property they wants to divide. In the "force," we most of us sticks to our own shirts and handkerchiefs-when we've got any. There was a young Doctor I knew, ma'am-used to see him on my beat frequent-who'd talk to anybody, and give away his clothes ever so free. This young Doctor used to attend Socialist meetings when he was off duty, and the other Sawbones would chaff him because he hadn't time for nothing else. The hall where these meetings was held was on my beat, and sometimes people would be a bit thirsty.

'Socialists in the back streets, having nothing to lose, is apt to pick up odds and ends permiscuous-like sometimes, and somebody's got to be run in. This young Doctor kept on spouting at the meetings till the other doctors got sick of equality and the rights of man. Everything down was to go up, and everything up was to go down.

down, and me and a mate took him to the hospital. Just as we was standing in the entrance, the young Doctor came running up very excited like. "Officer," he says, "come in here and arrest 'em all. They've stolen everything they could lay their hands on." So I goes up to his room, and there was nothing in it but a carpet. Curtains, pictures, furniture, were all gone. Then he takes me to one room with a gray-haired surgeon sitting in an armchair and wearing a smoking-cap. "Officer, do your dooty," he says. "That's my chair and cap, and he's got my best trousers on." Then he takes me to another. "Officer, this fellow's stolen my table, and bed, and washstand."—"Don't be an idiot," says this man, quietly smoking. "In the first place, you've got to prove it's your bed; in the second place, you've no more right to this bed than I have: each man is as good as any other man; and when a man hasn't got a bed, the best thing he can do is to take some one else's and stick to it—if he can." And so they all went on, till he began to see I couldn't take up the whole hospital staff, and promised to give up Socialism if they'd return his things, which they did, and stood him such a supper afterwards, he couldn't tell who'd got his trousers and who wore his

After Policeman X 274 got well, his chief idea was to testify his gratitude to me by bringing 'cases' whenever there was a chance. One evening he came to the hospital with a small but mischievous-looking boy. 'Do you know this youngster, nurse?' he asked.

No. Policeman X 274 was disappointed. 'I thought you knew everything, ma'am. This youngster can't tell his name, but said something about a hospital. Just come from the seaside. Put in charge of an old lady at Brighton. Old lady very deaf. Told us to take him to the hospital: she didn't want him. He'd pulled all the feathers out of her parrot. If you could have seen that parrot, you'd have believed it. He was as naked as original sin, ma'am, and twice as

Policeman X 274 departed; but the doctor in charge objected to giving the child a bed for the night. The child, however, was evidently used to hospitals, and proceeded to make himself com-The next morning, his anxious parents fortable. appeared on the scene, as well as the old lady, the latter explaining that it was the parrot she had wanted taken to a hospital, but that the stupid policeman had gone off with the child, and left her precious bird in a state of nudity. Fortunately, it was warm weather, and she hoped her dear parrot would get over his scandalous treatment. I rubbed a little vaseline on the bird's ungainly person, and she went away contented.

Policeman X 274 wiped his perspiring brow when the old lady had departed, parrot and all, and accepted a douceur from the boy's grateful parents with an ease evidently the result of long practice.

'That's what comes of trying to do your dooty, ma'am,' he said. 'It's usually the tother way round, though. All the women are very kind, and it's the men don't like us. The old 'Well, one night, there was a man knocked ladies from the country always calls us "officer"

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or "sergeant," and though you know they're "kidding" you, it's pleasant, all the same. But men are always pleased when a bobby comes to grief. I was trying to get into a 'bus once, and slipped. I daren't let go of the handrail, and was dragged along on my stummick half-way down Cheapside. The conductor was up on top and didn't see me, and no one inside tried to stop the 'bus 'cept a sweet old lady who asked her husband to interfere. He looked out. "Oh, it's only a bobby," he says, without lifting his hand; "and there's plenty more of 'em where he comes from. They're always dragging other people through the dirt. Now, it's his turn." Americans are very different. One old lady tried to get me to go to New York to take care of her, and said she wished the police would emigrate there, 'stead of the Irish.'

But the duties of the London police are not confined to looking after the welfare of old ladies. When an unfortunate man has attempted to commit suicide, he is generally taken into a hospital by policemen, one of whom accompanies him to the ward and remains there until he is relieved by another member of the force in plain clothes. From that moment up to the day of the patient's departure, a policeman is in constant charge. If a man has tried to kill himself by jumping through a window, he is often picked up with a broken leg, sometimes two. When he is settled in bed, he is comparatively safe; at any rate, there is no fear of his getting up; but he has to be watched always. Patients who have attempted to commit suicide are kept under observation, even if they may appear to be thoroughly sorry for what they have done. A man who has cut his throat might do himself harm by meddling with the bandages, although in cases of this kind they are specially planned to reduce the risk of interference. X 274 once brought in a pretty young girl who had jumped out of a window and broken one thigh. She puzzled me at first, with her low sweet voice and beautiful Irish eyes. All who saw her felt that the tragic side of life was before them, and that this poor girl had been cruelly treated by

> Fate, Fortune, Chance, whose kindness, Hostility, or blindness, Plays such strange freaks with human destinies.

It transpired, however, her temper was very bad, and that after a few words with her husband about 'another lady,' she had thrown herself out of the window 'to spite him.' He came to the hospital and assured her that she had no reason to be jealous at all, and evidently thought there was nothing unusual in the step, or jump, rather, which she had taken to prove her superiority to other wives.

Sometimes X 274 would bring to the hospital elderly people who had made very feeble attempts to do themselves bodily harm. They settled down so comfortably in the ward, and were so glad to get there, that the presence of a policeman seemed a farce. They had no intention whatever of making any further attempts on their lives, because the first one had given them all they wanted: they were in the required haven, with every intention of making a very gradual recovery. Then the policeman on duty would—especially if it were X 274—prove an

acquisition to the whole ward, and lend a hand at any job which did not take him too far from his charge's bed. Generally, he and his charge would play draughts or dominoes, and discuss Home Rule in the intervals between games. As a rule, a member of the force is a more desirable caretaker than an ordinary male attendant who thinks—as one of them told me—that 'minding deleterious patients [I think he meant 'delirious'] is an easy way of earning a living.'

Policeman X 274 when on duty in the ward suffered much mental anguish from the different views taken of his interesting charges by casual visitors. 'Dear me,' said one elderly spinster, 'do you mean to say that man actually tried to cut his throat?—How very interesting!' Then she turned to her companion: 'Tried to cut his throat, my dear!—Would you mind asking him, officer, if he did it with a razor or a kitchen knife?' In this instance the 'patient' had some see of humour. Raising himself on one elbow, he beckoned the visitor to approach. 'I allers does it with a chopper,' he said with a ghastly chuckle. 'You wait till I git out, and if you likes to come down our Court, I'll show ver'

Very poor people, as a rule, who had 'a friend or brother there,' as the poet puts it, were not much shocked by the awful nature of such a deed as attempted self-murder. They would often discuss the pros and cons with X 274 quite dispassionately, and seldom asked when his 'patient' would be discharged. In the first place, they usually did not want him back; and in the second, they knew that there was a little indispensable formality before a magistrate which might necessitate a certain period of imprisonment ere the 'patient' was allowed to return

home again.

I soon got on very friendly terms indeed with X 274. He brought in accidents, called for reports, carried wounded children to me, or discovered their friends in a manner which was simply marvellous. I had only to tell X 274 I wanted the relations of a wounded child; and he would shortly return with a whole crowd of people, who invariably told me that 'the gintleman said you wanted us, ma'am, and that if we didn't come at oncest, begorra, he'd make us.'

'Yes, ma'am; I finds "workus ladies" very trying, poor old bodies,' X 274 one day admitted in response to a question of mine. 'There was one old lady who got to know me so well, I hadn't the heart to spoil her enjoyment. "Now, you dear good man," she used to say to me, "I've had sixpence subscribed by a few kind friends for a little liquid refreshment. Here is twopence (she never said "tuppense," like most people. She'd been a real lady, she had—kept a school once) for you in case the—the sun gets to my head, when I shall expect you to have the goodness to escort me to Lockhart's Cocoa Rooms, and to call for me after I have had a slight nap."—The "sun" got to her head reg'lar, ma'am, and I'd take her to the cocoa place, and make her cumferable in a corner, and fetch her some tea when it got out again. They knew her ways at "The House," and never got uneasy about her. When I was off duty, I'd slip into plain clothes, offer her my arm, and take the old lady back again in style. "Policeman, I thank you for your

courtesy," she'd say to me, with a little old-fashioned bow. "You have a feeling heart, and I hope you will one day become an Inspector." Then the poor old body would toddle in and go to bed quite happy. One day, "the Duchess" (that's what they called her) didn't come. She'd asked 'em to give her little old Bible to "that dear, good, patient policeman, with her love;" and then she died. I changed my beat after that. I couldn't stand it when her reg'lar day out came round and she didn't turn up.

round and she didn't turn up.

'Now, factory girls is different,' continued X 274 meditatively. 'I was going over Waterloo Bridge one day, and my helmet come off in the rain and wind. I ran after it. "Don't kick it, sir; please, don't kick it," said a voice. I stopped to see what was the matter, and the helmet rolled under a wagon wheel and was squashed. "Got yer that time, sergeant," said the voice. It was one of them cheeky factory girls, ma'am, and she'd done it on purpose, to get my helmet squashed.

'It's anxious work being on a City beat,' reminiscently continued X 274. 'You get to 'You get to know a lot about other folks' business too. It's amazin' what old ladies will do. Why, I've had one stand in the middle of a crossing and explain she'd just been to the Bank. Then she'd put her hand up to her chest in an anxious sort of way, so as any thief within a mile could see where she'd shoved her money. I've actually seen old ladies from the country stand just inside a Bank and put their money into their under-pockets or the bosom of their gowns. They'll do the same thing coming out of stockbrokers' offices, and then be surprised they're robbed. I often wonder any of 'em gets home safe, though some country folks in town are mighty suspicious. The young men who come up on 'scursions hides their watches in their trousers pockets and forgets to tuck in the chain. It's wonderful work being on a beat nigh Exeter Hall, too, when the May Meetings is on. A rum lot of people comes to those meetings, and they're mostly main pleased with themselves. Noah's Ark isn't in it when it comes to some of the clothes the old uns wear. The young uns mostly gets new boots to come to town in, and tries to seem as if they didn't hurt; but you see 'em looking in all the windows, and standing on one leg to ease the other foot.

'The old Quaker ladies as come to town for their meetings is very different, and mostly smells of lavender all over. There was one old lady I remember at Charing Cross once. She'd got into the wrong 'bus, and the conductor handed her over to me to look after. She was just like a bit of old china or a wax image, and had white ribbons to her bonnet, and a bit of white stuff round her throat to match her snow-white hair. She must have been about eighty. When I took her across the street and put her in the right 'bus, she stretched out her little bit of a hand and shook my big un quite heartily, and says: "Friend, I am much obliged to thee. When thou art eighty, I hope the dear Lord will raise up as good a friend for thee. Lord bless thee." But they ain't all like her.'

The next time I saw Policeman X 274 he was brought in on a stretcher, after having stopped a pair of runaway horses. I insisted that I should

nurse him. During his delirium, I found out that at one period of his career he must have been a coachman. He'd sit up in bed quietly enough and then begin to pull off his quilt and fold it up tidily, saying he shouldn't want a rug, and would have it on the driving-box. Then he'd talk to the horses, as if he could see them, or begin to fold up his blanket just like the counterpane. When he started on the sheet, I would go quietly up to him and say: 'I think it's going to rain to-day; I wouldn't fold up the rug if I were you. Just keep it across your knees. Then you'll be all right.' He would answer me quite sensibly: 'Very well; that's all right. A shower'll lay the dust.' Now, he's pulling round a little, and will be taken off to the country as soon as he's able to move. There are rumours of promotion and another presentation when he comes back. He deserves both.

# IS AN ICE AGE PERIODIC?

THERE was a period in the distant past, we are told, when the climate over the northern hemisphere, above the fortieth parallel of latitude, was far more genial and equable than it is at present. During many consecutive ages this vast region enjoyed an alternation of long mild summers and short mild winters. In the vicinity of the Pole the earth was free from the incubus of the desolating ice-sheet, for even the circumscribed area of glaciation coeval with the period of human history had no existence.

A climatic condition so beneficent is delightful to contemplate. The more inviting does it appear in recollection of recent wayward tendencies of the British weather, such as sharp and protracted winters, ungenial summers, and generally mixed and uncertain seasons. Then the pleasure of confident belief that Boreas, the blustering terror of the year, was deposed, and his throne dissolved for several thousand years; that no more could the tyrant vent his fitful moods in icy blasts that skirmish into the heart of spring, and even chill the breath of summer. No creeping glacier or crushing icefloe would paralyse the efforts of Arctic adventure. The Pole itself, and the North-west Passage, once the goals of heroic endeavour, would be accessible to the ubiquitous tourist, whose course would lie along pleasant waterways, and in sight of shores clothed in the luxuriant verdure of almost perennial summer.

But disastrously for such fanciful speculation there is the dual nature of the cosmos to be reckoned with. The universal law of compensation balances one extreme of vicissitude by imposing another of a precisely opposite character. The genial period would be merely an oscillation—a swing in one direction of the terrestrial pendulum. The long period of warmth and luxuriance must be preceded, or followed, by that calamitous agency an Ice Age of equal duration.

At such time the heat energy of the then short fierce summer is ineffectual to dissipate the cumulative effects of the long cold winters. Immense glaciers would be formed—glaciation would gradually spread southwards from the Pole until a considerable portion of the northern hemisphere,

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including the greater part of Britain, was buried beneath an ice-sheet one thousand feet or more in thickness. The natural features of the land would be torn and scarred, the population driven out or destroyed, and the puny works of man ground and pulverised into effacement by the enormous abrading and crushing force of the

moving masses of ice.

A vast interval of time has elapsed since the A vast interval of time has called Age. The end of what is known as the Great Ice Age. The tracks of the glaciers are plainly visible. The glacial deposits, clay, moraines, and boulders, are abundant and distinct. But the testimony of the rocks is imperfect as regards a correct approximation of the period when that stupendous phenomenon prevailed; and absolutely void of evidence respecting its recurrence in the future. So vast and incomprehensible are the intervals of time involved in these cyclic changes, that such a tremendous agency might well be thought peculiar to a long past geological epoch. An ice age has therefore been regarded as an evolutionary phase of the distant past impossible to recur. So far from having only an archæological interest, ice ages are not without significance for the future of the human race, however remote. The agencies that produce them are still operative. age will assumably occur when the earth's orbital situation again favours glacial development.

It is probable that from time to time certain stages in the earth's perturbation may transiently influence climate in a minor degree. A series of cold winters and cheerless summers, for example, may find an explanation in planetary influence. Indeed, Sir Robert Ball refers to these cold winters as premonitory of the dread climatic vicissitude, an ice age, which he maintains is destined to recur within a measurable, though

distant, period.

A distinction must be held between weather periodicity and the gigantic cycle of climatic change. Sun-spots, for instance, influence the weather from year to year. But their influence in flecting and well additionable to the control of the contro is fleeting, and well within the limit of normal climatic range. The great sun-spot of February 13, 1892, indicated a maximum of solar activity. Resultant maxima in certain terrestrial phenomena were evidenced by unusual magnetic perturba-tions, remarkable auroral displays, terrible inundations and tornadoes in America, and a disastrous hurricane in Mauritius. It was suggested that a sun-spot of such unusual magnitude and gran-deur, by affecting solar radiation, might have caused the sudden fall in temperature which followed its passage across the solar disc. spots, however, do not so affect solar radiation. Probably the true cause of thermal fluctuation at such times is atmospheric disturbance by the magnetic property of the solar heat-rays.

From century to century the relative position of the earth in the plane of its orbit is, within certain limits, never precisely the same. The form of the earth's orbit and the direction of the earth's axis are constantly changing. These two perturbations constitute two distinct cycles of change, differing vastly in the time of their completion. Their progressive motion is exceedingly slow. The utmost limit of orbital eccentricity is only attained in a gigantic period of time. But during the waxing and waning of the orbit there are many revolutions of the line

of equinoxes, caused by the polar rotation of the earth, each rotation occupying a net period of twenty-one thousand years. There are also slight and temporary aberrations of the earth from its true orbital path. These may exercise some passing meteorological effect; but they have no bear-

ing whatever upon climatic change.

The planets of our system are tugging at each other with prodigious might; so great is the energy of planetary attraction, that when expressed in tons it surpasses comprehension. One result of these disturbing forces is to alter the earth's nearly circular orbit into an elliptical course, which as gradually changes back again into the circular. The utmost attainable eccentricity of the orbit would by itself appear to be too unimportant to cause extensive glaciation. The orbital form must therefore be associated with the polar rotation. This is a kind of swaying motion of the Pole about the axis, something similar to that of a spinning-top when about to fall. The Pole describes a circle in the heavens, causing an apparent revolution in a contrary direction of the twelve constellations in the ecliptic known as the signs of the zodiac. As the earth sweeps along in its majestic course, a consequent small annual change in the direction of its axis brings the point where the equator intersects the ecliptic a trifle farther to the eastward of the position of the preceding year. An apparent retrograde motion of the ecliptic results, which is known as the precession of the equinoxes. A complete revolution of the line of equinoxes occupies a net period of twenty-one thousand years.

It is therefore not the eccentricity of the orbit alone, nor the polar rotation alone, that can produce an ice age or a genial age, but a certain obliquity of the orbit, which is the combined and net result of both the perturbations. The effect of the earth's position at the period of greatest orbital eccentricity is to disproportion the length of the seasons, and the mean daily sun-heat, in either hemisphere, and thereby to induce two opposite climatic extremes, glaciation in one hemisphere co-existent with interglaciation in the other hemisphere. An ice age, say, in the northern hemisphere, and a genial age in the southern hemisphere for a period of ten thousand five hundred years. Then, as the Pole swings round half a circle, and inclines the earth's axis in an opposite direction, the southern hemisphere becomes glaciated, and the northern hemisphere genial, for a like period. So slow are the terrestrial motions which contribute to these phenomena, and so vast a period must consequently elapse before the earth can extricate itself from its extreme position, that two or more ice ages may alternately occur in either hemisphere.

The astronomical theory of climatic change is attractively set forth in Sir Robert Ball's admirable little treatise on the subject. While properly disclaiming any particular novelty for the facts and inferences, the theory is therein discussed in the modest and unpretentious spirit of true scientific research; and the argument is conveyed in such familiar terms, that any lay reader possessing a rudimentary knowledge of planetary motion can readily grasp and assimilate the con-

clusions. At first sight it is difficult to realise the ade-

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quacy of the greatest attainable obliquity of the earth's orbit combined with the polar rotation to produce the extraordinary thermal changes claimed as a consequence. With reference to this difficulty, Sir Robert Ball emphasises two essential elements in the astronomical theory. Misconception of them has hitherto vitiated deduction from planetary perturbation: one of those elements is the comparatively small diminution of solar heat necessary to set up glaciation; the other is the true proportion of summer and winter sun-heat received by either hemisphere.

In estimating the thermal changes requisite to induce extensive glaciation, it would be entirely wrong to reckon the heat given out by the sun according to the average measure of summer and winter heat upon the earth. Suppose these to be respectively sixty degrees and thirty degrees; the proper zero to reckon from will be the temperature of space, which, at a very moderate estimate, will be three hundred degrees below the zero of Fahrenheit. Therefore, the entire heat given out by the sun, reckoned from the temperature of space, will be respectively three hundred and sixty degrees and three hundred and thirty degrees. Consequently, a reduction of the earth's summer or winter heat to the zero of Fahrenheit would constitute a loss of only one-twelfth or one-eleventh of the entire heat given out by the sun.

Then as regards the due proportion of sunheat. The heat-measure received by the whole earth must be considered as a constant quantity, every year alike. But the vital point in this connection is that the yearly heat-measure received in either hemisphere is unequally distributed over the year, in a fixed and unchangeable proportion. Suppose the yearly heat-measure in either hemisphere be denoted by the number 100; then the proportion of summer heat will be 63, and of winter heat 37—no matter what may be the value of the yearly heat-measure received by the whole earth, no matter what degree of eccentricity the earth's orbit may have attained. At all times, and in every aspect of perturbation, the proportions in either hemisphere will be 63 and 37.

At the present time, in the northern hemisphere the sun is above the equator one hundred and eighty-six days of the year—that is to say, the summer in the northern hemisphere is now seven days longer than the summer in the southern hemisphere. Were the earth's orbit to permanently retain its present form, this difference of seven days in the seasons of the two hemispheres, being about the relative maximum, would continue to alternate between the two hemispheres in accordance with the direction of the earth's axis.

But when, in the lapse of ages, the earth's orbit reaches its greatest eccentricity, the difference in the length of the seasons in the two hemispheres will amount to thirty-three days. One hemisphere will then enjoy a long spring-like summer of 199 days with 229 heat-measures, and a short mild winter of 166 days with 136 heat-measures. The climatic conditions of the other hemisphere will be exactly the reverse of these. During the same period it will experience a short, fierce summer of 166 days with 229 heat-

measures, and a long rigorous winter over which will be spread only 136 mean daily heat-measures. The climate in the one hemisphere will be genial; that in the other hemisphere will be glacial. Notwithstanding the greater heat of the glacial summer, the earth passing much more rapidly through its perihelion, and the season being so much shorter, the fervid sun-heat will be inadequate to dissipate the accumulating deposits of the long cold winter. Great glaciers will form, and the desolating ice-sheet will spread itself over a vast area—a stupendous agency of destruction and calamity.

The astronomical theory of an ice age advances not one step beyond a simple thesis based upon demonstrable results of scientific research. The precise extent of planetary attraction, and its effect in periodically dragging the earth into an elliptical path, are familiar enough to the astronomer; and the resultant thermal changes are assumably calculable. The main purpose of the theory is to approximate the periods of these great climatic vicissitudes which the testimony of the rocks, however full and conclusive in other respects, is too imperfect to reveal. Thus the astronomer, with his unassailable evidence, comes to the aid of the geologist. In the astronomical theory he exhibits a potent agency in the cosmical evolution, and supplies a unit and a measure to hitherto indeterminate periods of geological time.

An ice age, as Sir Robert Ball reminds us, is not catastrophic. There is no sudden transition from smiling luxuriance to bitter desolation. The development of this stupendous phenomenon is as gradual as the planetary configuration that brings it forth. Very many generations of men will flourish and pass away before even the initial stage of another ice age is reached. Whether the next ice age will be as severe and overwhelming as that which has left its indelible traces upon the face of nature, or whether its intensity will be modified by the altered condition of the earth, is a question more properly in the domain of the physiographer.

## MEMORIES.

A SONG.

O Love, since we two bade good-bye,
The regal roses' rich perfume
But calls the wild tears to my eyes,
And brings me dreams of pain and gloom.
'Twas 'mong the roses, O Sweetheart,
That all our farewell words were said;
Each summer from their graves they rise;
But you to me are dead, are dead.

The dearest treasure that I hold
Is just one rose your lips did kiss;
His golden store no miser hoards
Nor prizes more than I do this;
Yet bitter are the tears mine eyes
Upon its withered petals shed;
Poor ghost of glory once mine own,
Like it, your love is dead, is dead.

M. HEDDERWICK BROWNE.

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